

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A single chain recombinant antibody capable of specifically binding to SAGA-1, said antibody ~~comprising an antigen-binding region of the S19 monoclonal antibody, wherein the antigen-binding region consists~~ consisting essentially of SEQ ID NO: 1 and SEQ ID NO: 3 bound to one another by a linker.
2. (Original) The recombinant antibody of claim 1 wherein the linker is a peptide.
3. (Previously Amended) The recombinant antibody of claim 2 wherein the peptide linker is a $(\text{Gly}_4\text{Ser})_n$ polymer, wherein n is an integer ranging from 1-6.
4. (Previously Canceled)
5. (Currently Amended) The recombinant ~~monoclonal~~ antibody of claim 3 wherein the recombinant ~~monoclonal~~ antibody is coupled to an effector molecule selected from the group consisting of toxins, virucides and microbicides.
6. (Currently Amended) The recombinant ~~monoclonal~~ antibody of claim 5, wherein the toxin is adenylate cyclase toxin.
7. (Currently Amended) The recombinant ~~monoclonal~~ antibody of claim 3 wherein the recombinant ~~monoclonal~~ antibody is coupled to a diagnostic label.
8. (Previously Canceled)
9. (Currently Amended) A composition, comprising ~~as an active agent~~ the recombinant ~~monoclonal~~ antibody of claim 1, ~~in~~ and a pharmaceutically acceptable carrier.
10. (Currently Amended) The composition of claim 9, wherein said composition comprises a concentration of recombinant ~~monoclonal~~ antibodies sufficient such that one dose of said composition effectively binds 100 million sperm cells.

11. (Currently Amended) The composition of claim 9, wherein said recombinant ~~monoclonal~~ antibody is present on the surface of liposomes.

12. (Original) The composition of claim 11, wherein said liposomes are non-phospholipid positively charged liposomes.

13. (Currently Amended) The composition of claim 12 wherein the recombinant ~~monoclonal~~ antibody is coupled to or formulated with, an effector molecule selected from the group consisting of toxins, virucides and microbicides.

14. (Original) The composition of claim 13, wherein the toxin is adenylate cyclase toxin.

15. (Currently Amended) A composition, comprising the recombinant ~~monoclonal~~ antibody of claim 1, immobilized on a solid support.

16. (Currently Amended) The composition of claim 15 wherein said recombinant antibody is covalently bound to said solid support.

17. (Original) The composition of claim 16 wherein the solid support is in particulate form.

18. (Currently Amended) A method of detecting ~~the presence of~~ sperm in a biological sample, said method comprising
contacting said sample with the composition of claim 15; ~~and~~
washing the solid support to remove nonspecifically bound material; and
identifying sperm immobilized on said solid support.

19. (Currently Amended) A single chain recombinant ~~monoclonal~~ antibody comprising an antigen-binding region ~~of the S19 monoclonal antibody, wherein the antigen-binding region that~~ consists essentially of two binding peptides covalently bound to one another by a peptide linker, said binding peptides consisting of ~~having~~ an amino acid sequence of

- a) SEQ ID NO: 1 and SEQ ID NO: 3, respectively; or
- b) amino acid sequences identical to SEQ ID NO: 1 and SEQ ID NO: 3 but having 1 to 3 conservative amino acid substitutions in each of SEQ ID NO: 1 and SEQ ID NO: 3, respectively, wherein said recombinant antibody is capable of specifically binding to SAGA-1.

20-32 (Previously Canceled)

33. (Previously Amended) A nucleic acid sequence comprising a single chain Fv fragment selected from the group consisting of SEQ ID NO: 9, SEQ ID NO: 10, SEQ ID NO: 16 and SEQ ID NO: 12.

34. (Original) The nucleic acid sequence of claim 33 further comprising regulatory sequences for expressing the single chain Fv fragment in a host cell.

35. (Previously Amended) A host cell comprising heterologous DNA encoding a single chain Fv fragment selected from the group consisting of SEQ ID NO: 9, SEQ ID NO: 10, SEQ ID NO: 17 and SEQ ID NO: 12.

36. (Original) The host cell of claim 35 wherein the host cell is a bacterial cell and the DNA encodes a single chain Fv fragment comprising the sequence of SEQ ID NO: 17.

37. (Previously Canceled)

38. (New) The host cell of claim 35 wherein the host cell is a plant cell.

39. (New) The single chain recombinant antibody of claim 3 wherein the antibody comprises an amino acid sequence selected from the group consisting of SEQ ID NO: 8, SEQ ID NO: 11 and SEQ ID NO: 15.

40. (New) The single chain recombinant antibody of claim 39 wherein the antibody is immobilized on a solid support.

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41. (New) The recombinant antibody of claim 39 wherein the recombinant monoclonal antibody is coupled to an effector molecule selected from the group consisting of toxins, virucides and microbicides.

42. (New) The recombinant antibody of claim 39 wherein the recombinant antibody is coupled to a diagnostic label.